

Fig. 1

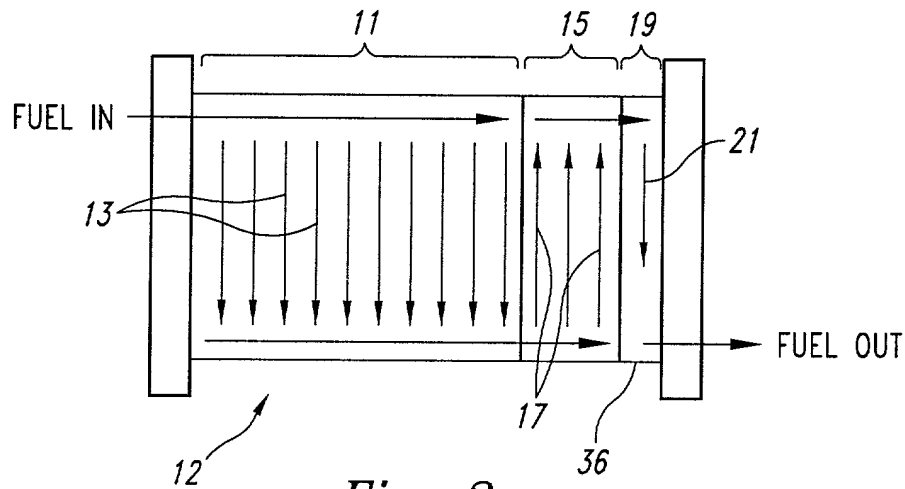


Fig. 2

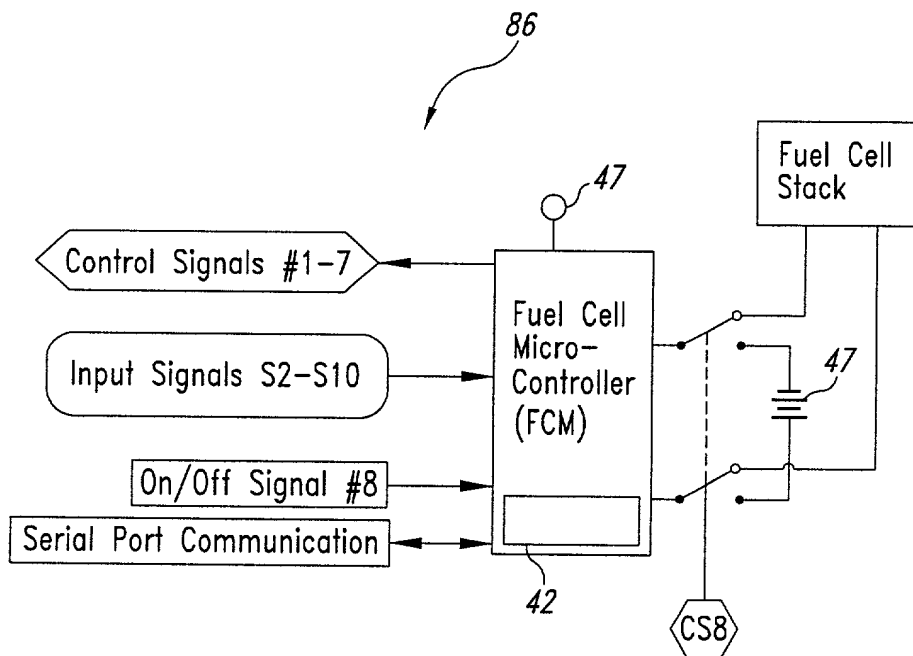


Fig. 4

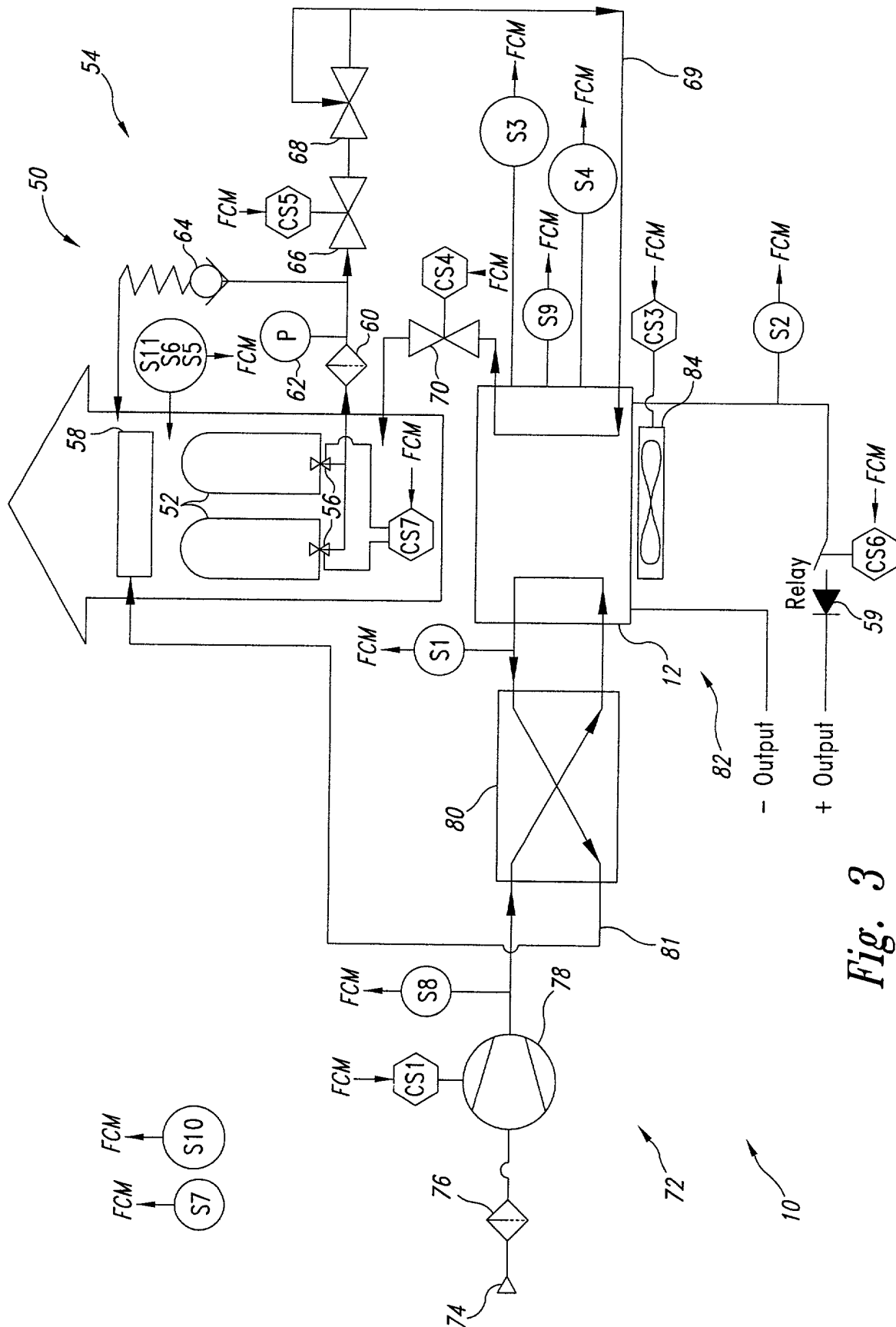


Fig. 3

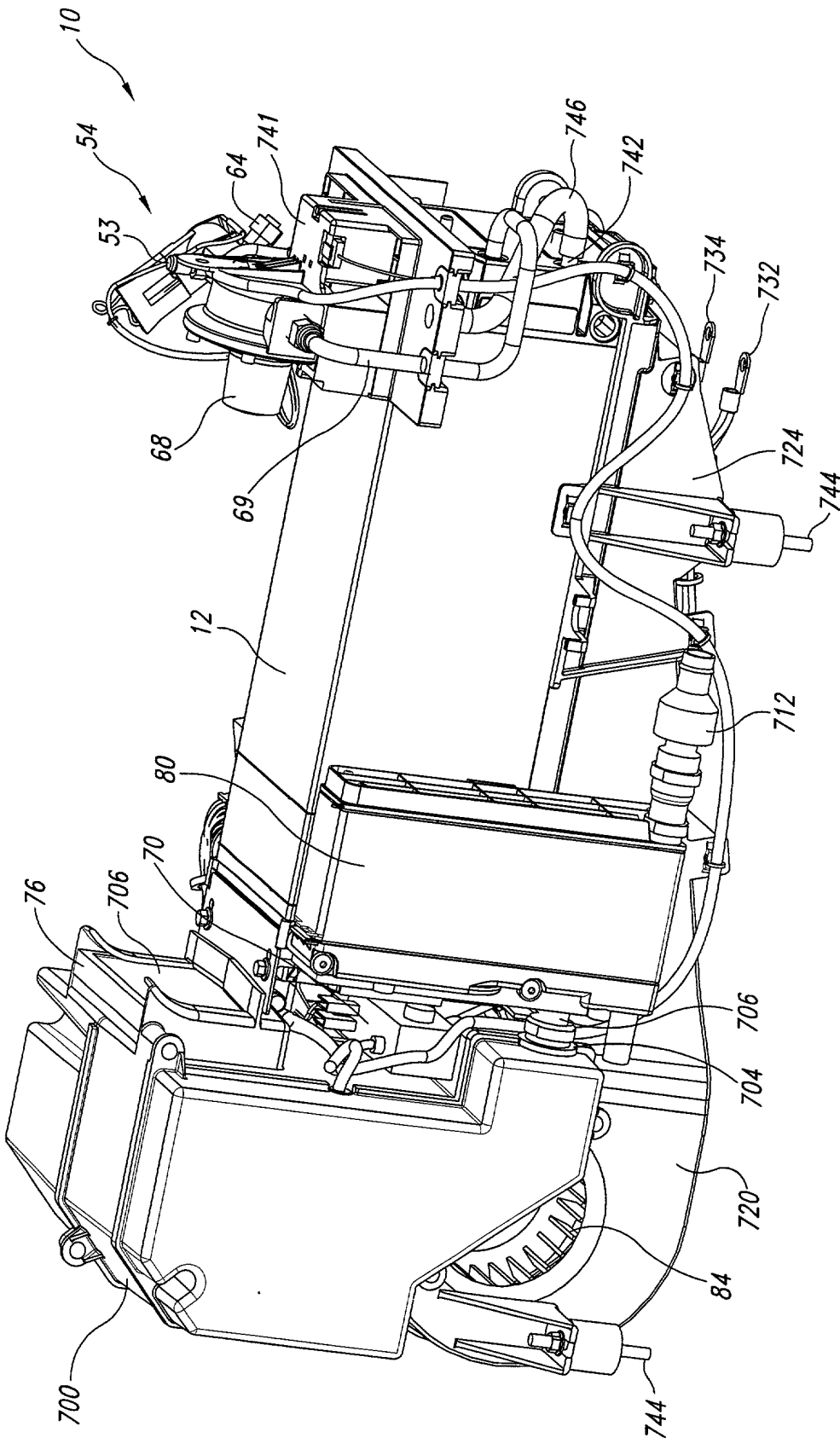


Fig. 5



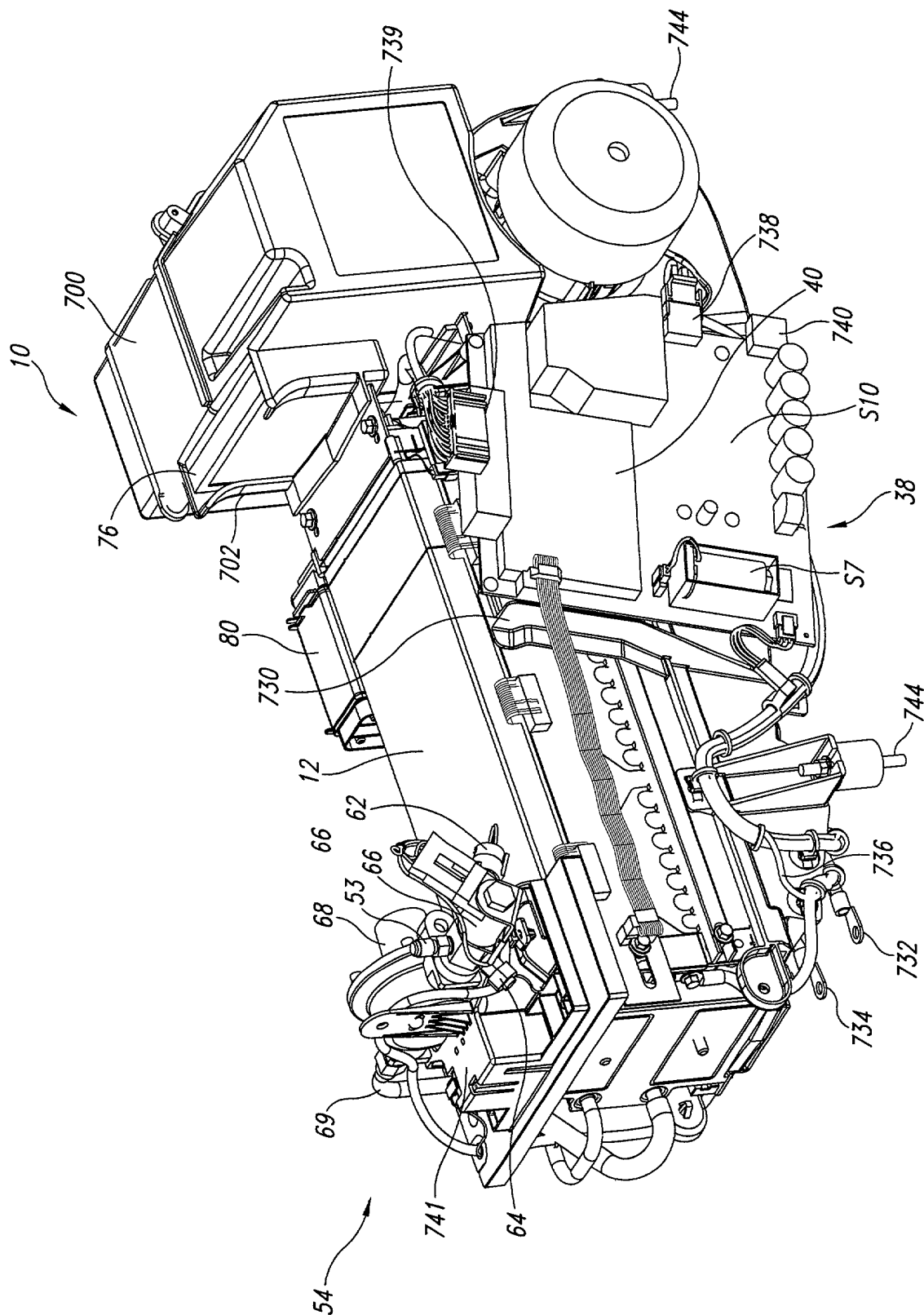


Fig. 7

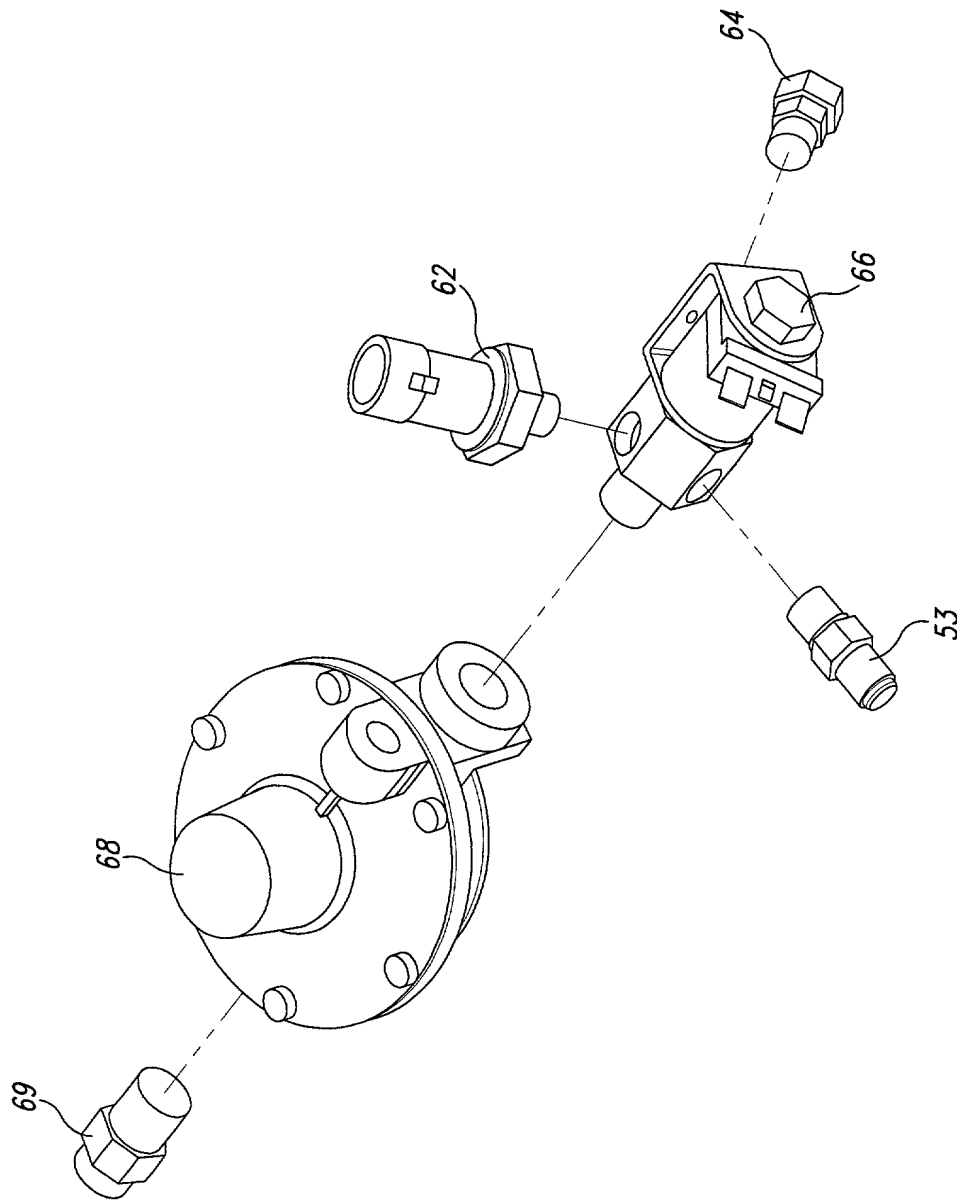



Fig. 8

100



System Task Scheduling Frequency	
System Task Description	Frequency in ms
Monitor Stack Current and Set Air Compressor Duty Cycle	50
Monitor Stack Voltage	100
Monitor Purge Cell Voltage	100
Monitor Cell Voltage Monitor Check	200
Transmit Status Message	200
Toggle Hardware Watchdog Circuit	200
Perform One Dynamic System Self Test Suite Test	200
Monitor Stack Temperature	1000
Adjust Cooling Fan Duty Cycle	1000
Monitor Oxygen Concentration Sensor	1000
Monitor Hydrogen Leak Sensor	1000
Monitor Hydrogen Fuel Pressure Sensor	1000
Monitor Ambient Air Temperature	1000
Monitor Air Flow Feedback Sensor	1000
Monitor Air Compressor 12/3 Voltage Rail Feedback	1000
Monitor Battery Voltage	1000
Monitor DAC Channel A Air Compressor Feedback Voltage	1000
Monitor DAC Channel B Cooling Fan Feedback Voltage	1000
Monitor H2 Sensor Wheatstone Bridge Leg+	1000

Fig. 9

Slot	System Task Scheduling Strategy			
	Task 1	Task 2	Task 3	Task 4
1	Monitor Stack Current	Monitor Stack Voltage	Cell Voltage Check	Toggle Watchdog
2	Monitor Stack Current	Monitor Purge Cell	Transmit Status	
3	Monitor Stack Current	Monitor Stack Voltage	Monitor Stack Temp	Monitor D/A Channel
4	Monitor Stack Current	Monitor Purge Cell	Calc Fan Duty Cycle	
5	Monitor Stack Current	Monitor Stack Voltage	Cell Voltage Check	Toggle Watchdog
6	Monitor Stack Current	Monitor Purge Cell	Transmit Status	
7	Monitor Stack Current	Monitor Stack Voltage	Monitor O2 Sensor	Monitor D/A Channel
8	Monitor Stack Current	Monitor Purge Cell	Monitor H2 Sensor	
9	Monitor Stack Current	Monitor Stack Voltage	Cell Voltage Check	Toggle Watchdog
10	Monitor Stack Current	Monitor Purge Cell	Transmit Status	
11	Monitor Stack Current	Monitor Stack Voltage	Monitor Fuel Pressure	System Self Test
12	Monitor Stack Current	Monitor Purge Cell	Monitor Air Temp	
13	Monitor Stack Current	Monitor Stack Voltage	Cell Voltage Check	Toggle Watchdog
14	Monitor Stack Current	Monitor Purge Cell	Transmit Status	
15	Monitor Stack Current	Monitor Stack Voltage	Monitor Air Flow	System Self Test
16	Monitor Stack Current	Monitor Purge Cell	Monitor 12 Volt Rail	
17	Monitor Stack Current	Monitor Stack Voltage	Cell Voltage Check	Toggle Watchdog
18	Monitor Stack Current	Monitor Purge Cell	Transmit Status	
19	Monitor Stack Current	Monitor Stack Voltage	Monitor Battery Voltage	System Self Test
20	Monitor Stack Current	Monitor Purge Cell		

Fig. 10

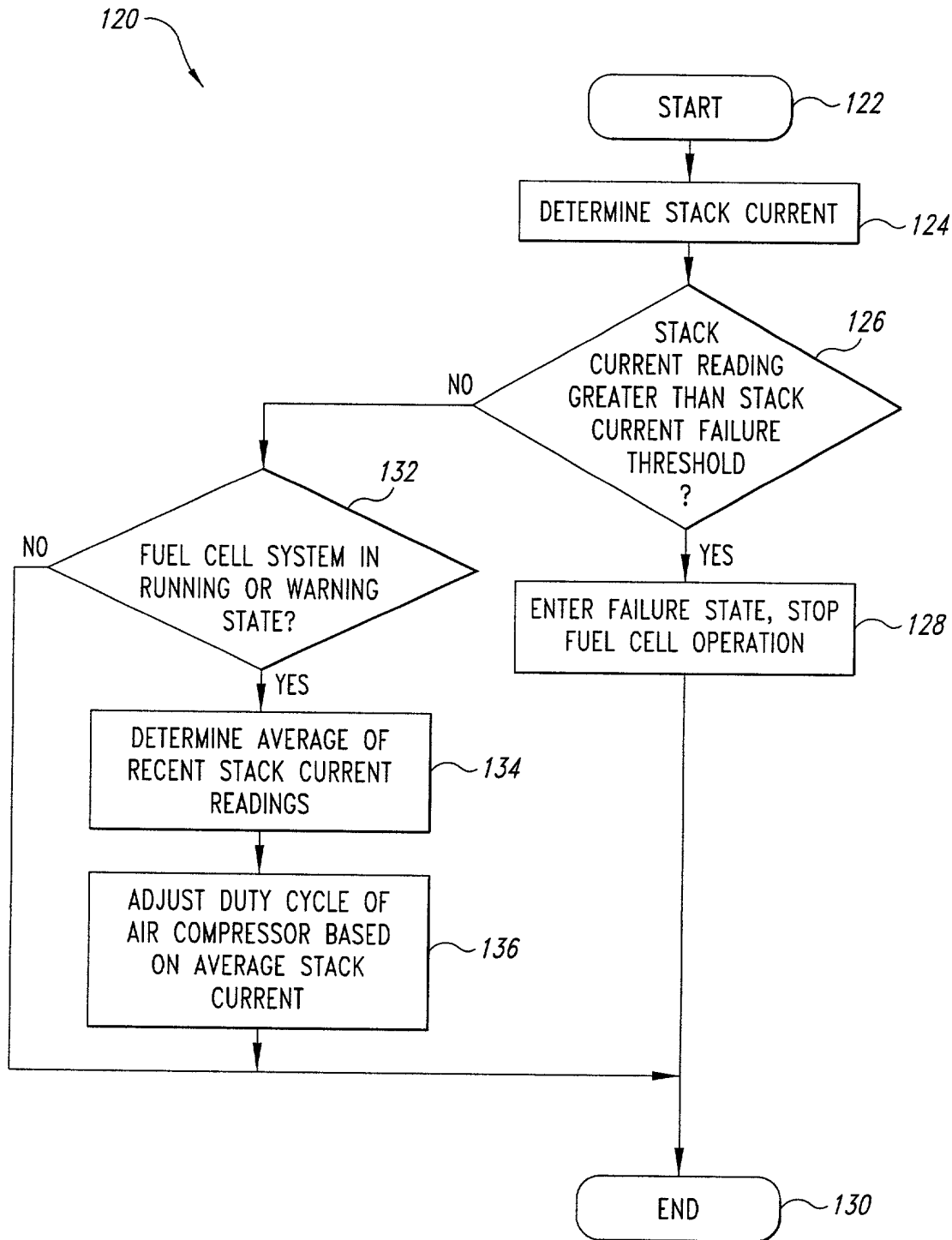


Fig. 11

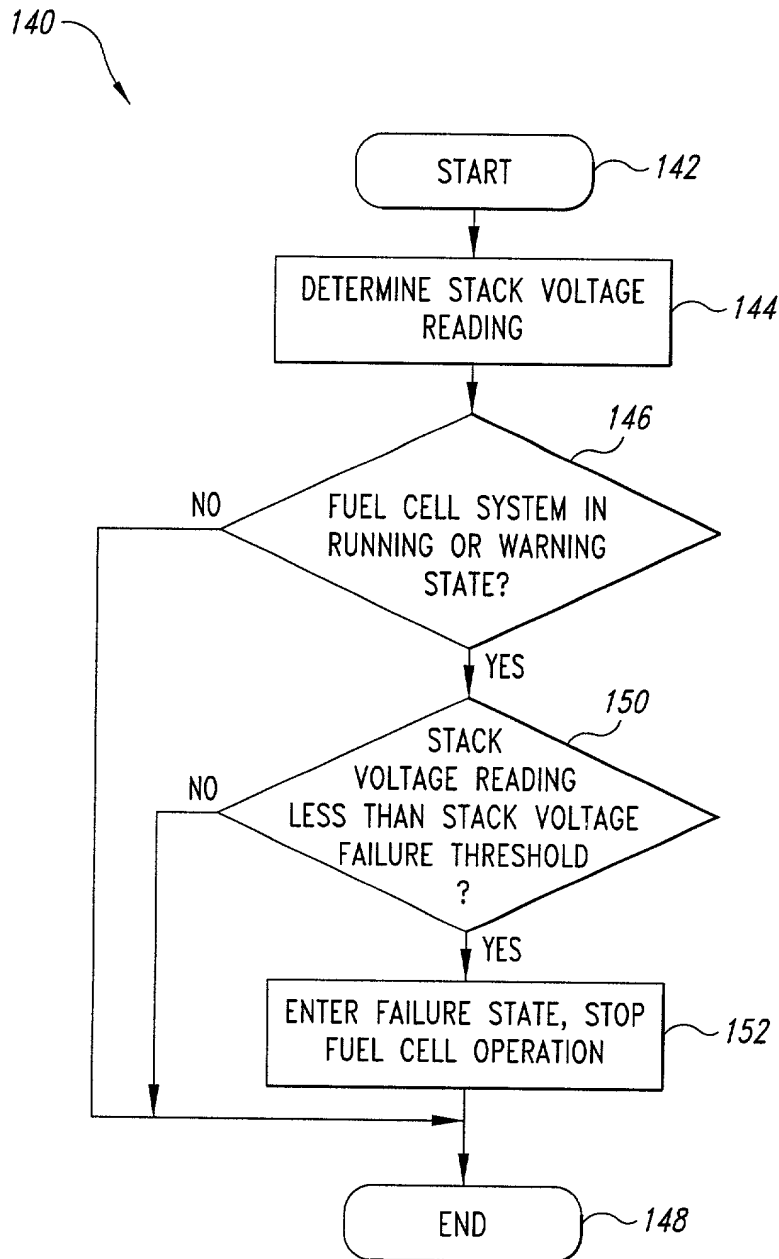


Fig. 12

160

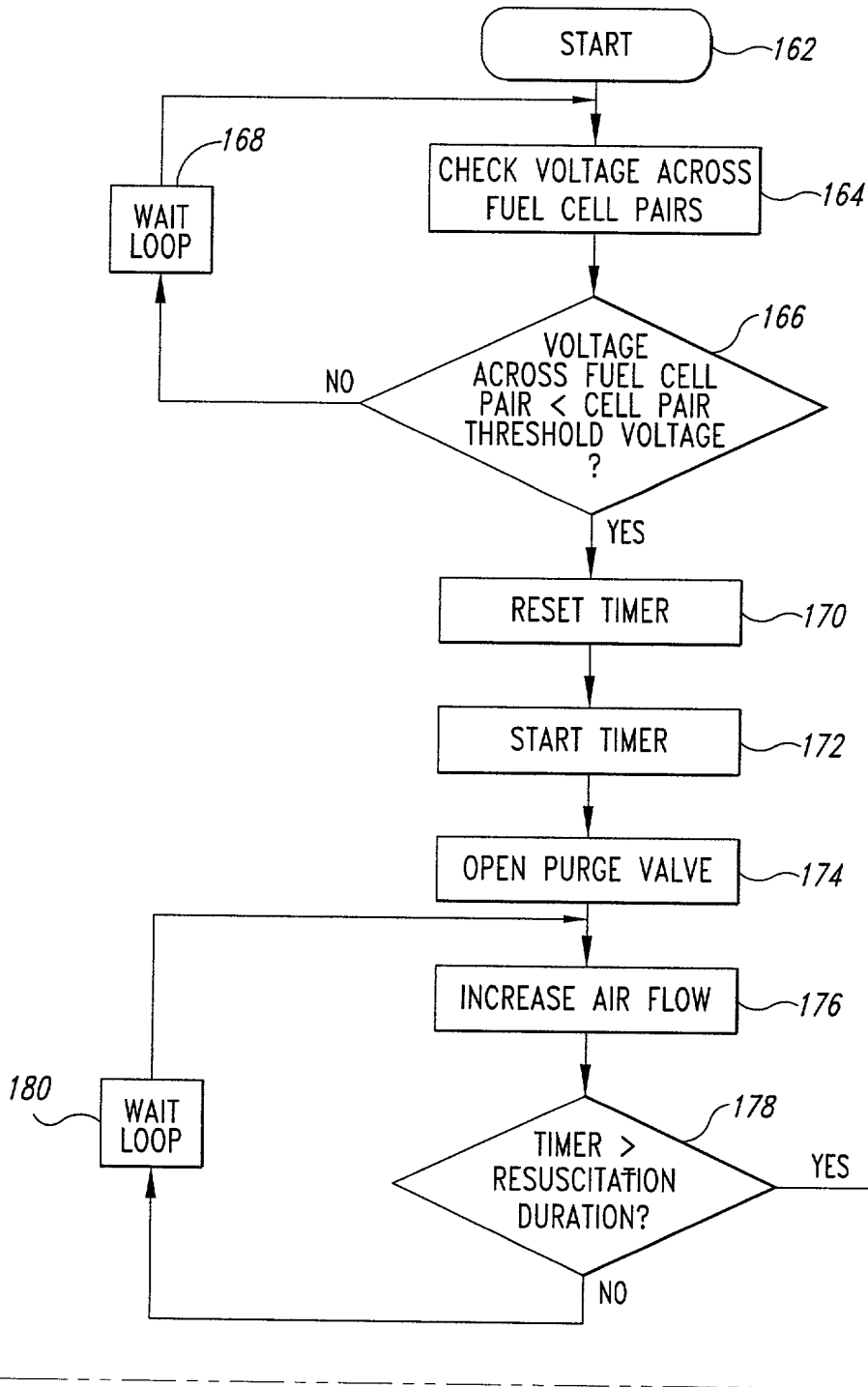


Fig. 13A

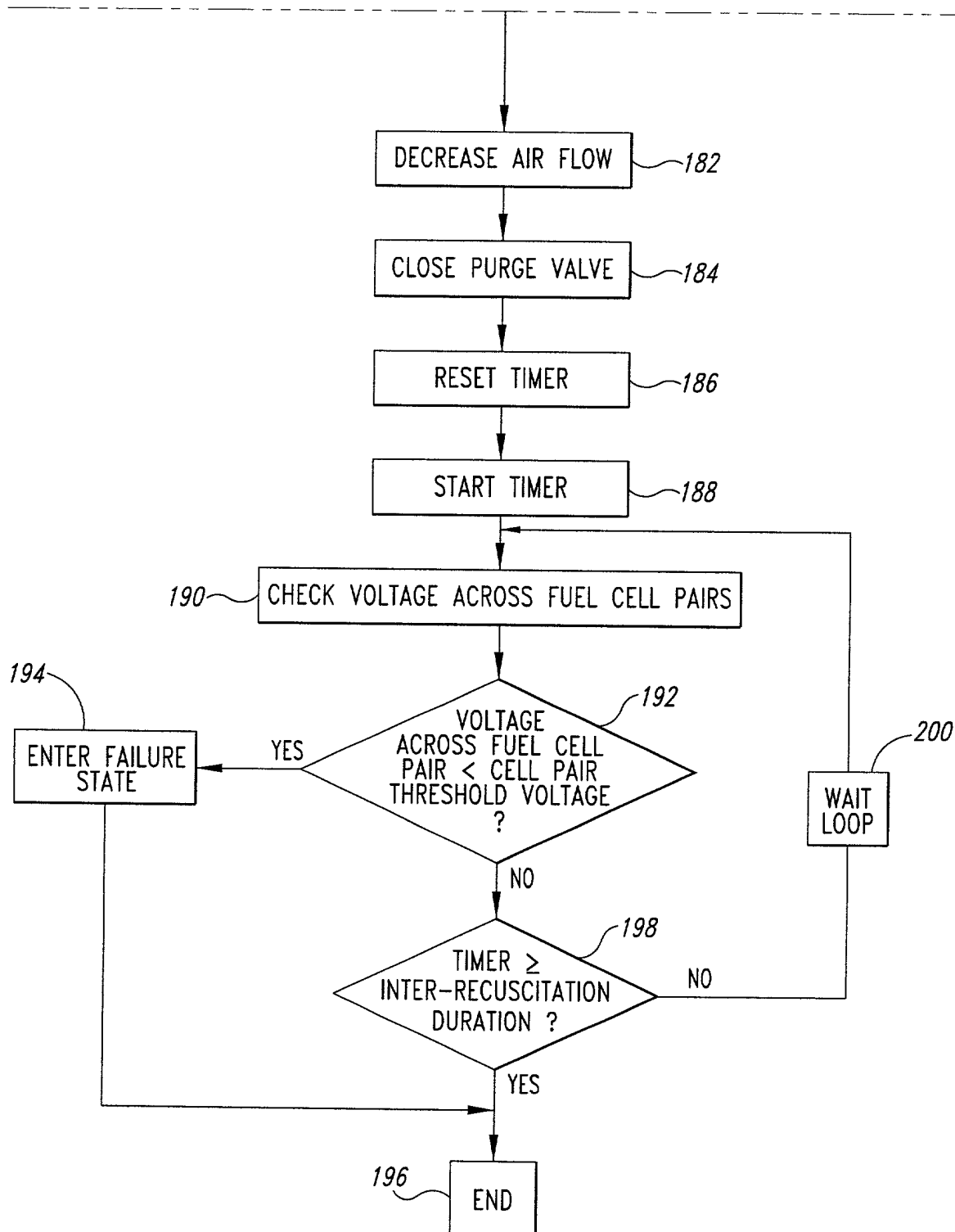


Fig. 13B

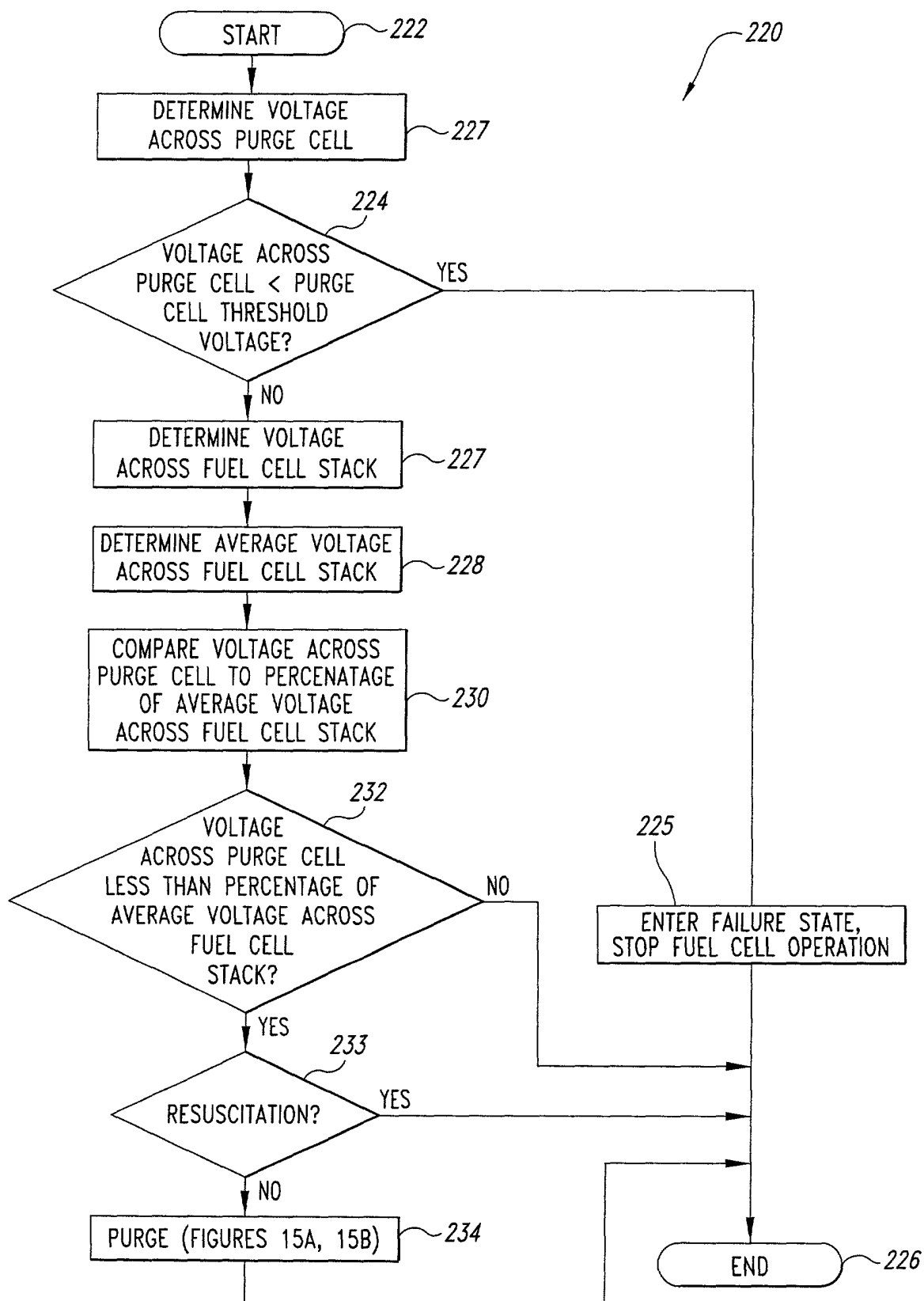


Fig. 14

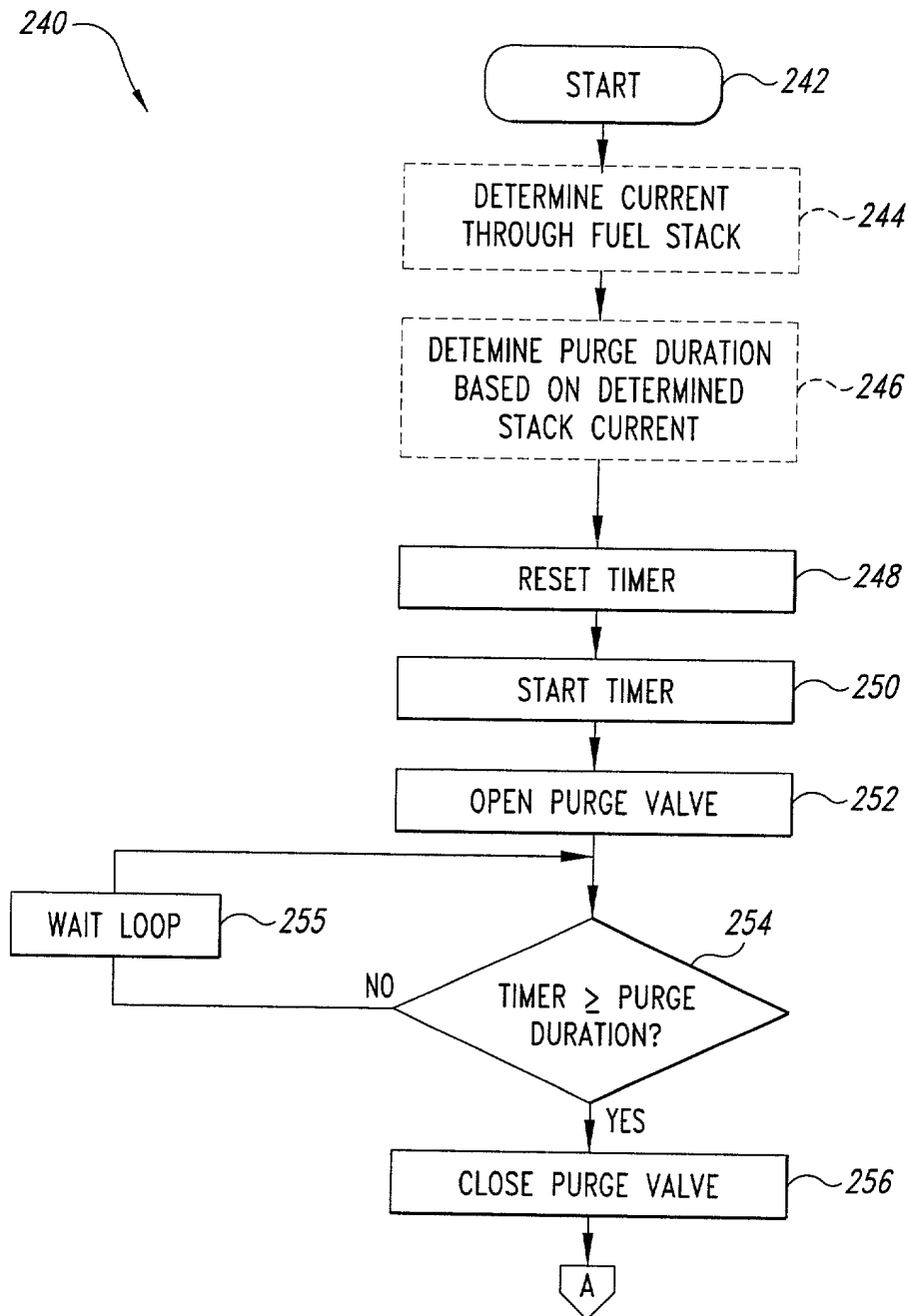


Fig. 15A

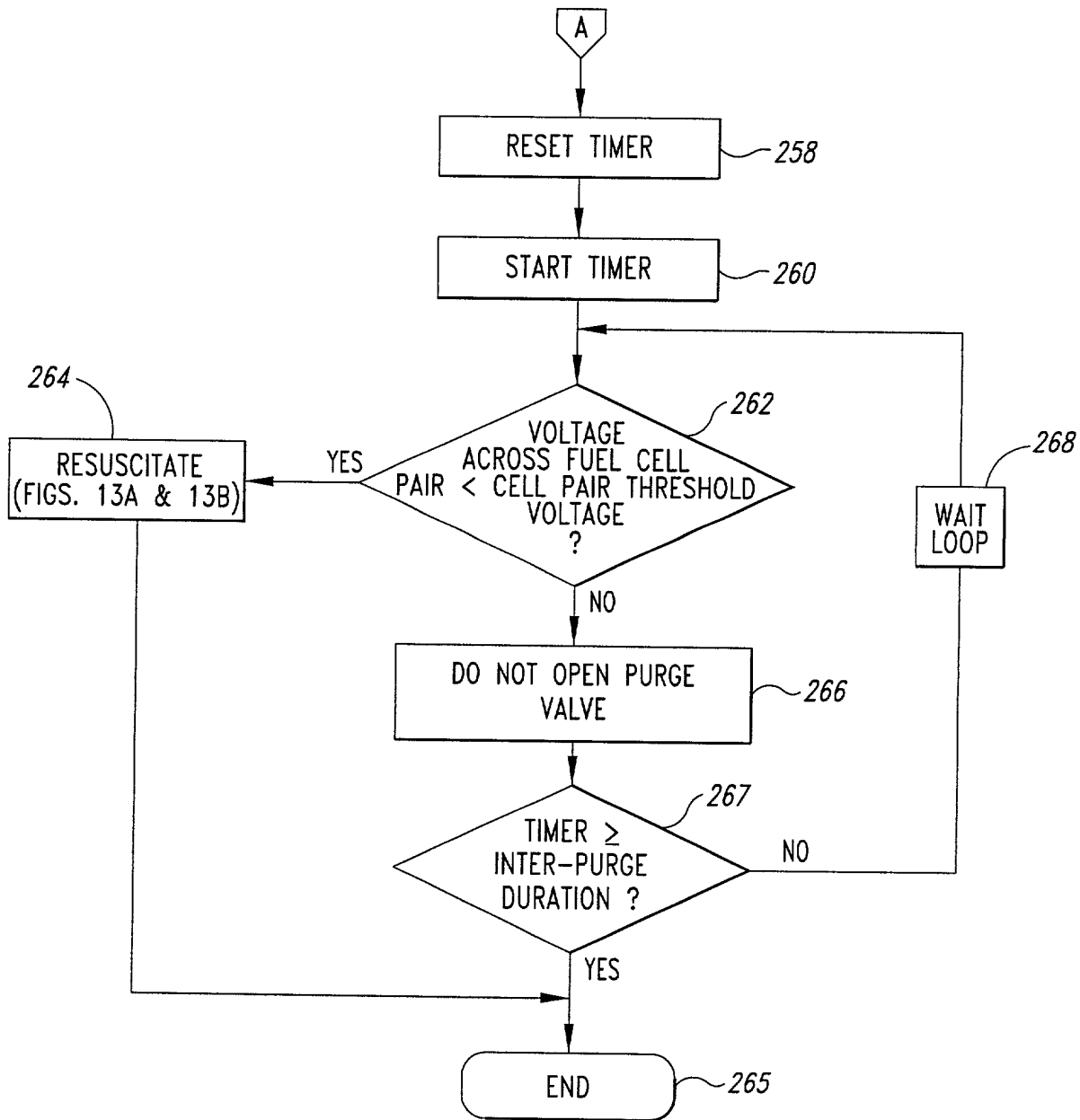


Fig. 15B

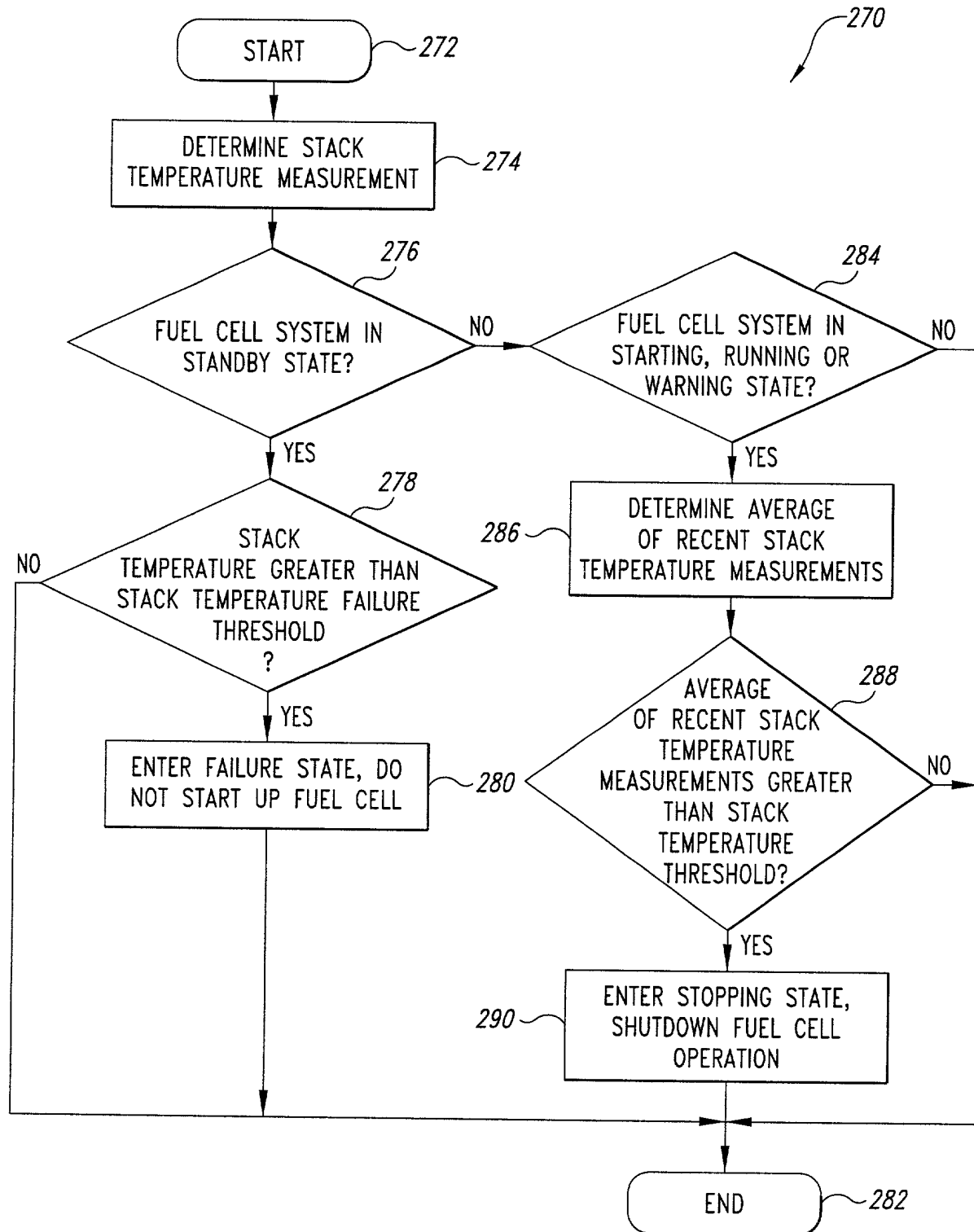


Fig. 16

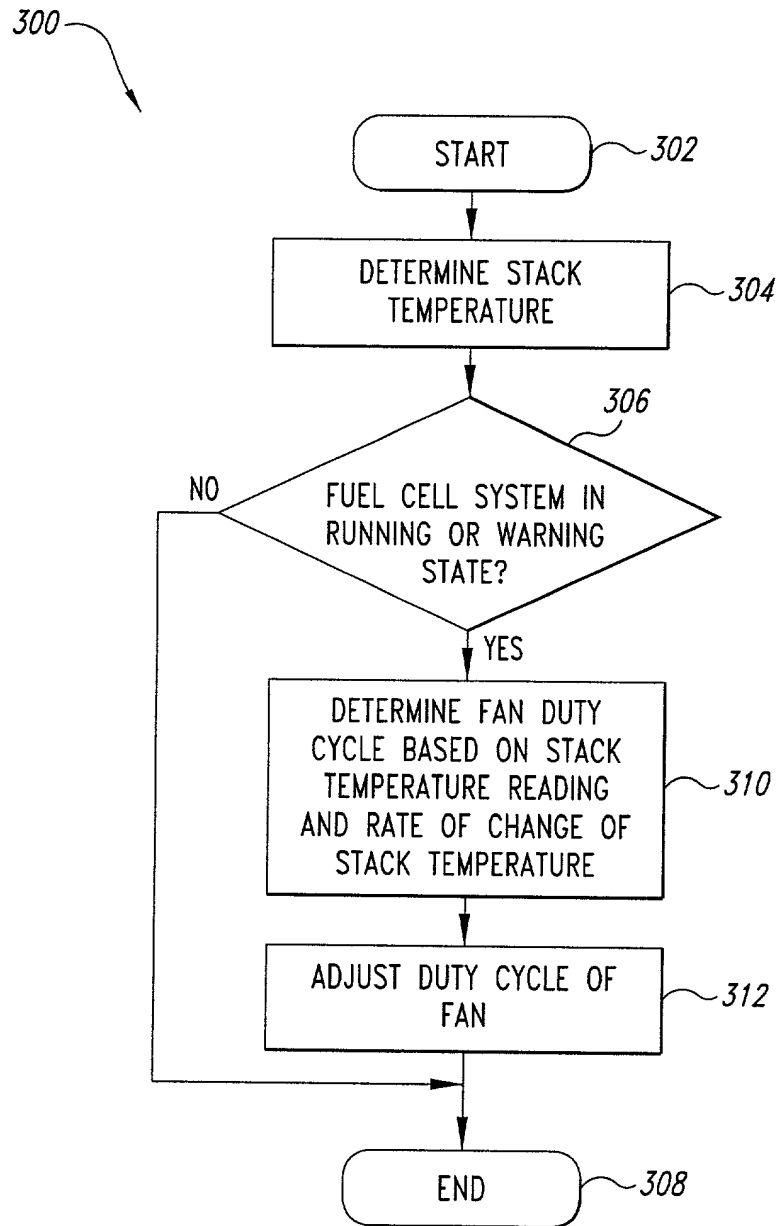


Fig. 17

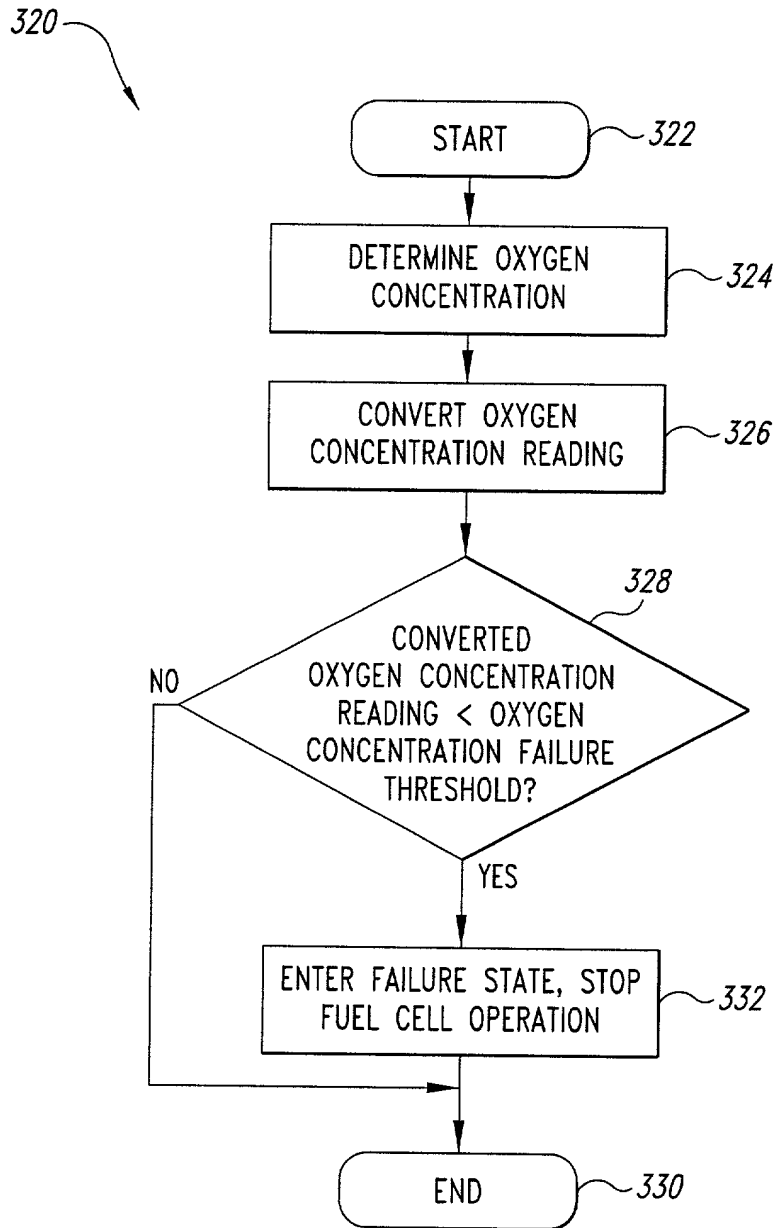


Fig. 18

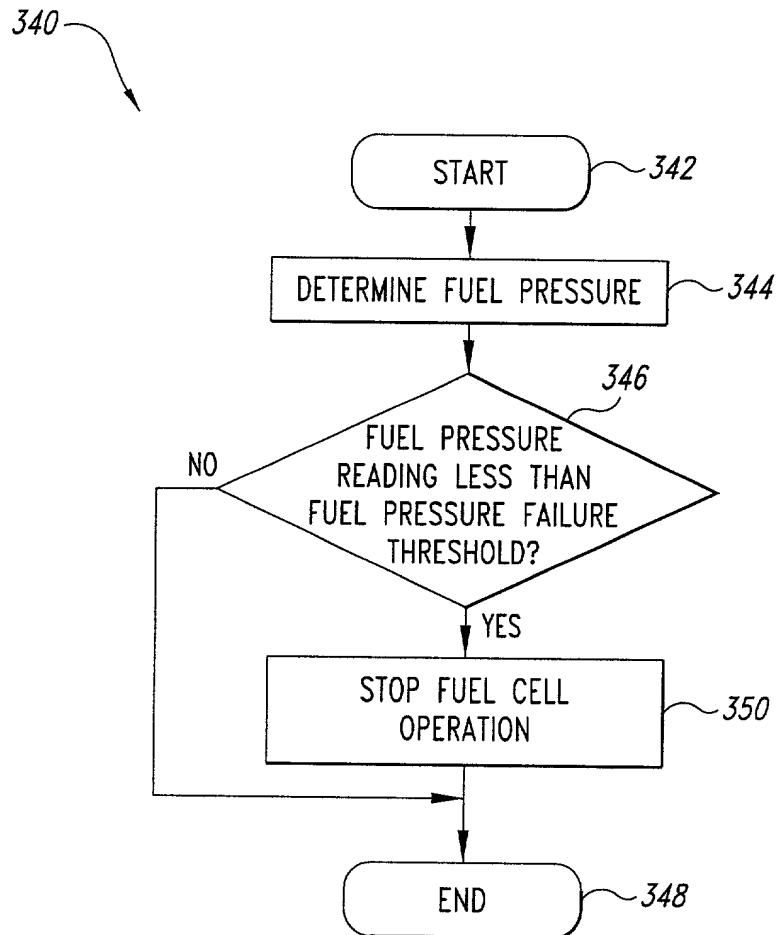


Fig. 19

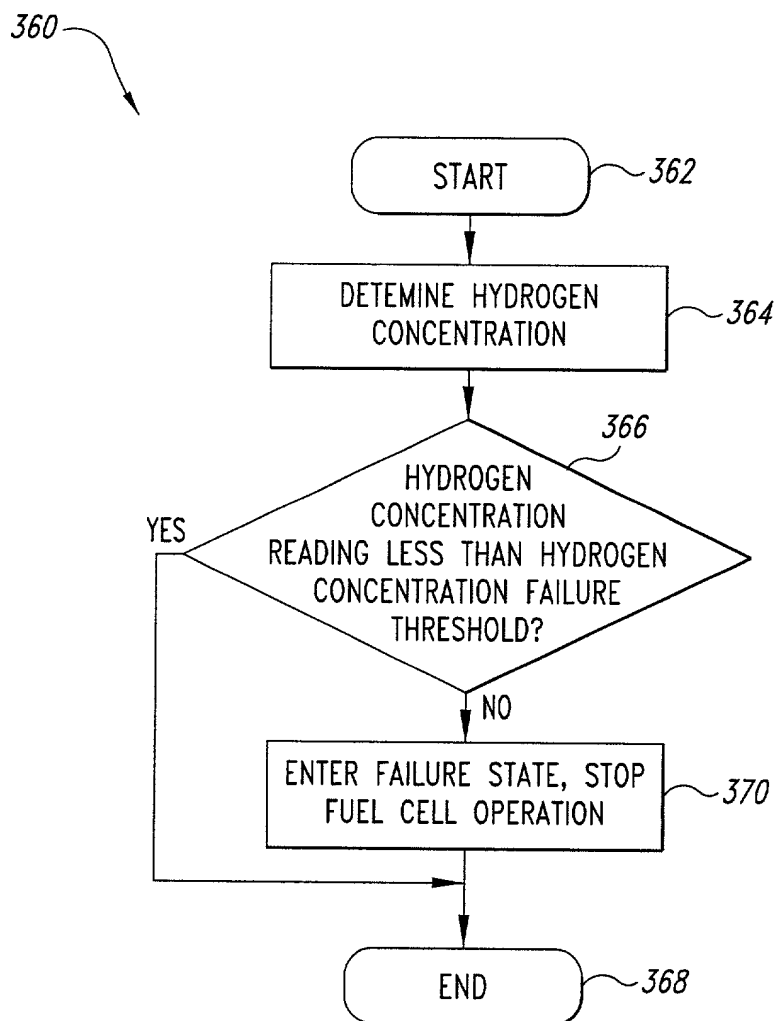


Fig. 20

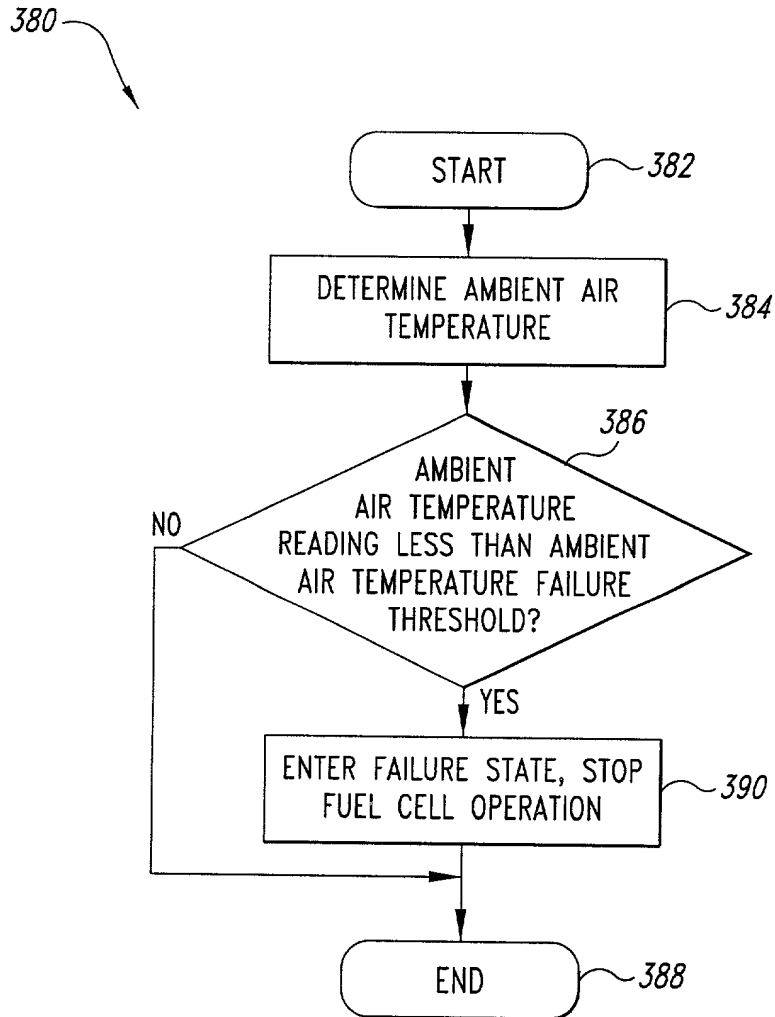


Fig. 21

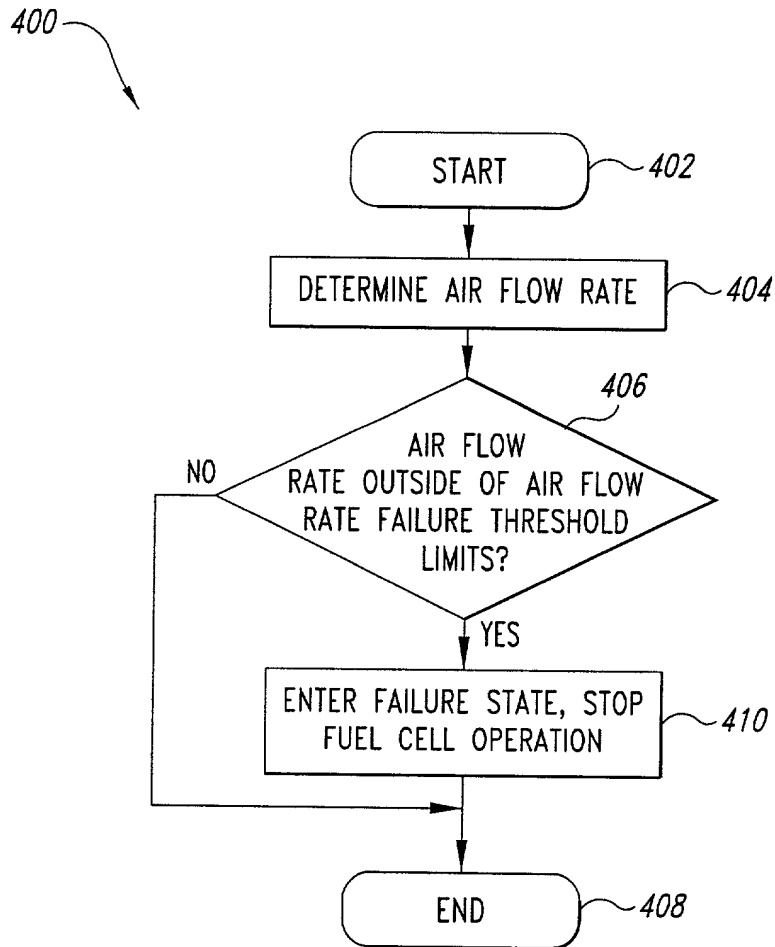
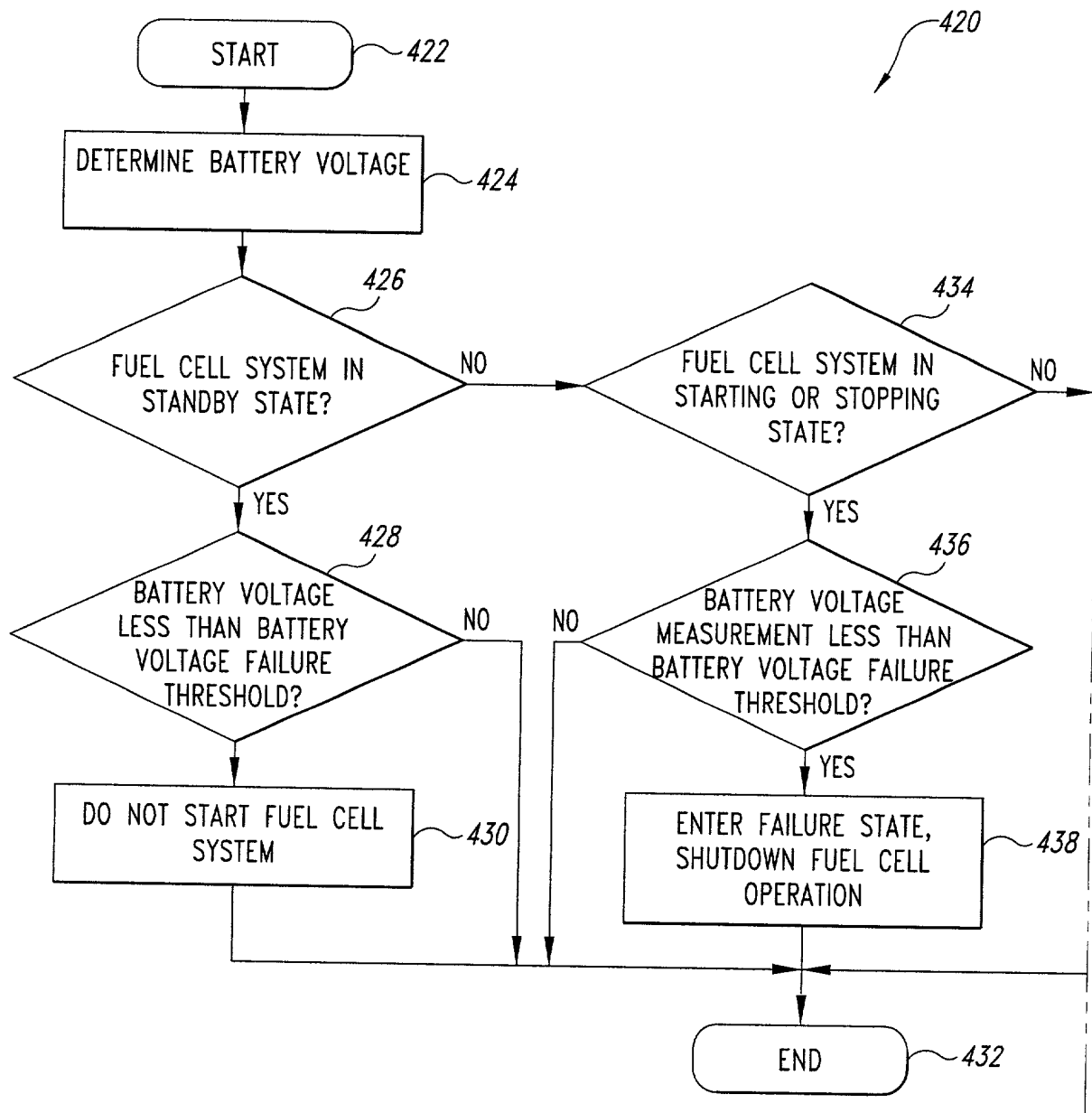


Fig. 22



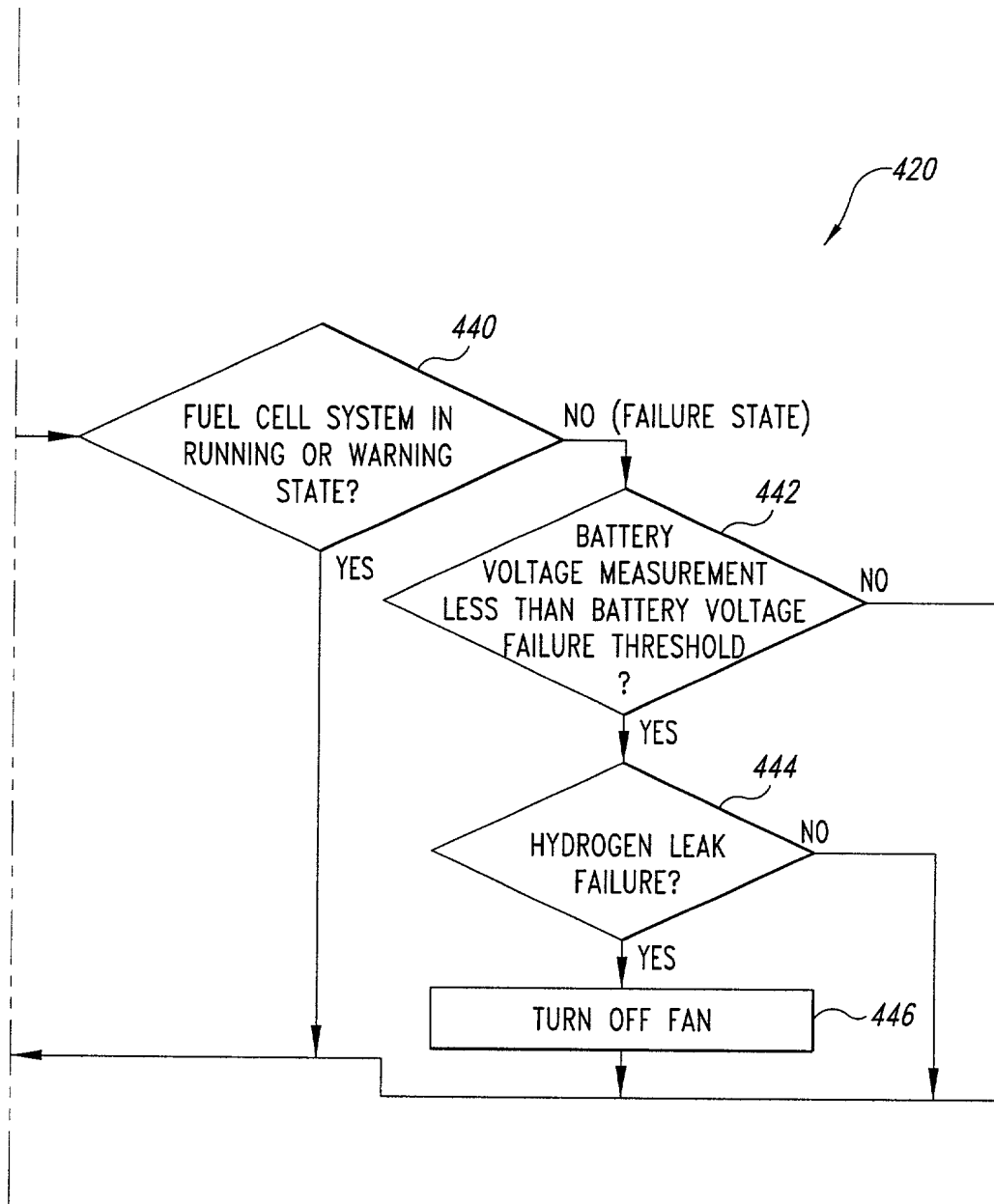


Fig. 23B

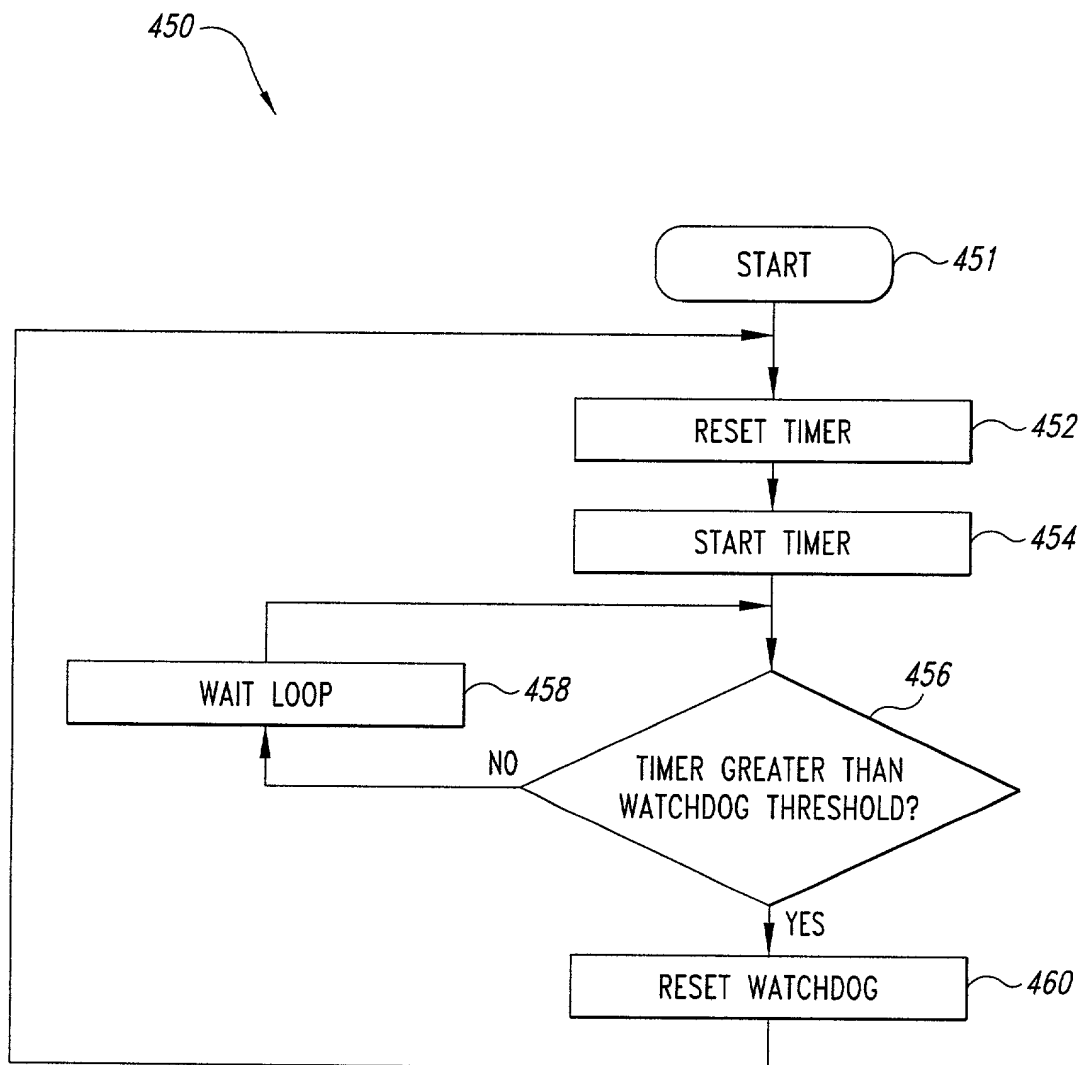


Fig. 24